

II. REJECTION OF CLAIMS 1-5, 7, AND 8 UNDER 35 U.S.C. § 103(A)

Claims 1-5, 7, and 8 stand rejected as being unpatentable under 35 U.S.C. § 103(a) over Kleykamp (U.S. Patent No. 4,312,383) in view of Pfleger (U.S. Patent No. 5,588,468).

Applicants respectfully submit that the rejection of claims 1-5, 7, and 8 under 35 U.S.C. § 103(a) is improper because there is no suggestion or motivation in the prior art to combine the cited references, and further that there is no reasonable expectation of success.

“Patent examiners carry the responsibility of making sure that the standard of patentability enunciated by the Supreme Court and by the Congress is applied in each and every case.” MPEP § 2141 (emphasis in original).

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations.

MPEP § 2143. Applicants submit that that there is no suggestion or motivation to combine the teachings of Kleykamp and Pfleger, and further, that the combination of Kleykamp and Pfleger has no reasonable expectation of success.

Independent claim 1 recites: “A pipe . . . comprising a smooth inner tube (1) based on a fluorinated thermoplastic material, a corrugated outer tube (2) which is in contact with the inner tube via the inside peaks (3) of its corrugations and which is made of a polyamide-based thermoplastic material, and means for connecting together the outer tube and the inner tube.” (emphasis added). Applicants respectfully submit that there is no suggestion or motivation to combine the teachings of Kleykamp and Pfleger to achieve the structure of the present invention as recited in claim 1 and that there is no reasonable expectation of success.

Kleykamp discloses a pipe with a smooth inner tube and a corrugated outer tube. However, Kleykamp does not disclose that the outer tube be “made of a polyamide-based thermoplastic material” or that the inner tube be “based on a fluorinated thermoplastic material” as positively recited in claim 1. However, the Examiner asserts that one of ordinary skill in the art would be motivated by Pfleger to employ an outer layer of a polyamide and an inner layer of a fluorinated thermoplastic in order to provide a corrugated pipe having an external corrugated layer that is corrosion-resistant and burst resistant, and a smooth inner bore that is chemically resistant to fluid that is transported through it.

Applicants submit that one of ordinary skill in the art would be more likely to look to U.S. Patent No. 3,538,209 (“Hegler”) cited in Kleykamp to identify potential materials for a pipe having a smooth inner layer and a corrugated outer layer because Hegler—unlike Pfleger—discloses a pipe having a smooth layer. Hegler lists a number of materials for the smooth inner pipe, but, notably, fluorinated thermoplastic material is not one of them.

Hegler, which is identified in Kleykamp, dismisses the use of corrugated pipes without a smooth inner surface since a smooth inner surface is required for many applications, including where liquid is to be pumped. Further, Hegler states that “[s]uch pipes [i.e., corrugated pipes] are not suitable as pressure piping, either, since a change in pressure inside of the pipe produces a change in its length.” (col. 3, ll 50-71).

Because of the limitations identified in Hegler, Kleykamp refers only to pipes having an inner smooth tube and a corrugated outer tube. In particular, Kleykamp itself states that one of its objectives is to enable the inventive hose “to be used in applications where it is subjected to substantial internal pressures and/or vacuum yet such hose construction has substantial flexibility and the smooth inside surface 26 of the inner tube 25 assures fluid flow therethrough in a non-

turbulent manner.” (col. 3, ll. 32-35). Further, Kleykamp states, “[T]he resulting hose construction 20 has flexibility yet optimum strength and is capable of withstanding high internal pressure and/or vacuum with a minimum tendency of the inner tube to pull away from the outer tube.” (col. 8, ll. 34-38).

Accordingly, one of ordinary skill in the art is dissuaded by the objectives of Kleykamp (to maintain fluid flow in a non-turbulent manner) and the teachings of Hegler (corrugated pipes are not suitable for pressure piping) to consider the inner and outer corrugated pipe of Pflieger for suggestion as to materials to be used for a hose of Kleykamp’s structure. Pflieger does not suggest that its materials may be used for producing a pipe of Kleykamp’s structure with an outer layer having sufficient burst resistance and an inner layer chemically inert to the transported fluid, as asserted by the Examiner, since such suggestion is opposite to the teachings of Kleykamp and Hegler—in particular that an inner corrugated layer is not suitable or preferable for pressure piping that transports a fluid.

Furthermore, although the Examiner asserts that one of ordinary skill in the art would be motivated by Pflieger to employ an outer layer of a polyamide and an inner layer of a fluorinated thermoplastic in order to provide a pipe having an external corrugated layer that is corrosion-resistant and burst resistant, and a smooth inner bore that is chemically resistant to fluid that is transported through it, Pflieger states, “For two-layer conduits, the homopolyolefins or copolyolefins must themselves have reactive groups that make them compatible.” (col. 4, ll. 54-56). In the alternative Pflieger suggests that the inner layer may be firmly joined to the outer layer by providing an intermediate layer that is compatible with both of them. (col. 4, ll. 65-67). Accordingly, grafting of the inner layer, or the use of an additional bonding layer, is contemplated in Pflieger when the inner layer comprises a fluorinated polymer and the outer layer

comprises a polyamide. As this difficulty is apparent and contemplated where both tubes are corrugated (in which there is a large area of contact between the tubes), one of ordinary skill in the art would be likely to think that this difficulty would be increased where the area of contact between the inner and outer tubes is reduced, i.e., where the outer tube is corrugated and the inner tube is smooth. Therefore, one of ordinary skill in the art would not be motivated to use the materials of Pfleger in a tube of Kleykamp's structure, and further would not have a reasonable expectation of success in combining the materials of Pfleger in a pipe of Kleykamp's structure. Kleykamp supports the proposition that the construction of a pipe comprising a corrugated outer tube and smooth inner tube is difficult (col. 1, ll. 25-27) and discloses that metal particles be embedded in portions of the inner tube to further the bonding of the inner tube to the outer tube (col. 4, ll. 12-17).

Claims 2-5, 7, and 8 depend from claim 1, either directly or indirectly, and therefore contain all the limitations thereof. Accordingly, for at least the same reasons given above in connection with claim 1, Applicants respectfully submit that the rejection is improper and request reconsideration and withdrawal of the rejections.

III. REJECTION OF CLAIM 6 UNDER 35 U.S.C. § 103(A)

Claim 6 stands rejected as being unpatentable under 35 U.S.C. § 103(a) over Kleykamp in view of Pfleger as applied to claims 1 or 2 above, and further in view of Blasko et al. (U.S. Patent No. 6,776,195). Applicants rely on the arguments asserted above in connection with the rejection of claims 1-5, 7, and 8 based on Kleykamp in view of Pfleger.

Claims 6 depends from claim 1 directly and therefore contains all the limitations thereof. Accordingly, for at least the same reasons given above in connection with claim 1, Applicants

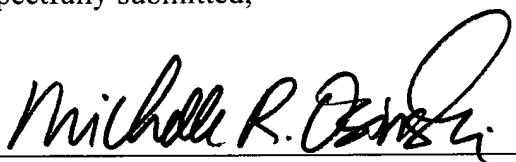
respectfully submit that the rejection is improper and request reconsideration and withdrawal of the rejection.

IV. CONCLUSION

For the above cited reasons, all of the claims presently pending in this application are believed to be allowable. If the Examiner has any further questions or concerns, the Examiner is invited to contact the Applicant's undersigned attorney.

Respectfully submitted,

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